REMARKS

Claims 1-19 stand rejected. The following remarks further supplement those submitted in response to the Final Office Action. Applicant respectfully disagrees the position taken by the Examiner in the Advisory Action with regard to the application of the teachings of Maley to Allen and Schlereth. In addition, Applicant believes that the Examiner has failed to give proper weight to the term "overcoating."

The Maley Reference

Maley discloses a electrochemical sensor for the analysis of blood samples, and in particular, the measurement of glucose concentration. Maley's device includes an "active layer" (96) positioned on the electrode and composed of platinized activated carbon (PAC). The active layer can include an enzyme that participates in an electrochemical reaction.

Maley discloses that the PAC layer contains a hydrophobic binder and is therefore difficult to wet after fully dried. For example, Maley states at col. 15, lines 25 to 32:

> The binder material, as noted above, acts to hold the components of the active layer together. To this mixture, a surfactant may be added to provide better printing flow characteristics when active layer 96 is screen printed upon conductive strip 66. An additional benefit of the surfactant is to act as a wetting agent for the sensor during use. *The active layer 96 being comprised of a hydrophobic binder becomes difficult to wet with water after it is fully dried. The surfactant facilitates this wetup.*

Thus, a surfactant is used because of the physical properties of the active PAC layer and the method use to deposit the active PAC layer. The other portions of Maley that discuss a surfactant are similarly directed to a PAC layer.

Maley does not disclose the use of a surfactant in other layers or suggest the use of a surfactant generally. At best, Maley stands for the proposition that surfactants can be added to particulate layers containing a hydrophobic binder. There is no suggestion that the surfactant of Maley could or should be added to other materials. Thus, it is improper for the Examiner to

suggest the Maley teaches the use of surfactants in association with *any* hydrophobic material. Clearly, one of ordinary skill in the art would have to have some basis to decide which materials require a surfactant.

The Examiner's comments, based only on the narrow teachings of Maley, suggest a belief the use of a surfactant is *per se* obvious. If this is the case, then the Examiner should be able to provide references which teach the use of surfactants in devices similar to those disclosed in Allen and Schlereth.

The combination of Allen and Maley

The Allen reference is concerned with the electrochemistry of cytochrome *c*, while Maley is directed toward a glucose sensor having a membrane. The suggestion in Maley to apply a surfactant to an active layer to assist with wetting up does not provide any motivation to apply a surfactant to a device lacking a PAC/binder material (i.e., the device of Allen). The existence of hydrophobic materials in Allen does provide the necessary motivation to add the binder of Maley to Allen. Maley's "teachings" with regard to surfactants extends no further than their use in the PAC active layer of Maley.

Allen has no equivalent to the PAC active layer. Accordingly, one skill in the art would have no reason to believe that the teachings of Maley would improve the electrode of Allen and assist with the promotion of cytochrome *c* electrochemistry.

Overcoating

The Examiner argues that the term "overcoating" does not require a surfactant in a layer over the sulfur containing layer. Applicant respectfully disagrees. Applicant's specification states:

> In a further aspect of the current invention the layer of the sulfur containing compound can optionally be *overcoated with a surfactant layer*. The surfactant layer can be applied after the application of the sulfur containing layer or at the

> same time as the sulfur containing layer, for example the sulfur containing species and the surfactant can be placed in a coating bath into which the electrode material is immersed. Due to the higher affinity of the sulfur containing species for the electrode material it will bind to the electrode surface in preference to the surfactant, *leaving the surfactant in a layer over the sulfur containing layer.*
>
> Page 4, lines 8-13. (emphasis added).

Thus the specification clearly sets forth the meaning of an "overcoating." Furthermore, the plain meaning of the term "overcoating" requires a separate layer. The word "coating" "means a layer of material covering something else." The word "over" further stresses the concept of an additional layer. Thus, it is improper for the Examiner to suggest that the claim language does not require a surfactant layer positioned on top of a sulfur containing layer.

Conversely, Maley teaches that the surfactant is incorporated in the PAC rather that applied in an *overcoating* to a coating. The choice of language, i.e., incorporating, is specific and requires the surfactant to be mixed with the PAC layer. Since the PAC layer is not applied on top of a sulfur containing layer, the portion of Maley cited by the Examiner does not relate to an "overcoating."

The rejection based on Schlerich in view of Maley

Schlereth discloses surface modified electrodes (SME) able to catalyze the oxidation of NADH. As part of the surface modification, amino-containing sulfur compounds, cystamine, and cysteine were used. The electrocatalytic oxidation of NADH at different mediator-SMEs was then monitored by cyclic voltammetry. Schlereth, which is cited to teach a sulfur containing moiety comprising cystine.

As discussed above with respect to the combination of Allen and Maley, Maley's disclosure is specific to a surfactant positioned in a PAC layer containing a binder and is used in combination with an electrochemical sensor. Conversely, Schlereth includes no such layer or any PAC/binder.

One of ordinary skill in the art would have no motivation to apply the teachings of Maley, which disclose a blood glucose sensor with a PAC layer, to the Schlereth reference. The Maley reference discloses a different device, having a different structure, adapted to investigate a different analyte. Even if a surfactant were added to the SME of Schlereth, the is no reasonable expectation of success. Oxidation of NADH is a much different chemical process from the detection and analysis of glucose. If a surfactant were added, it is unclear how the surfactant would effect the device of Schlereth.

Moreover, even if these references could be combined, the combination would fail to teach the limitations of Applicant's claims. As discussed above, Maley does not disclose applying an overcoating of a surfactant to a coating comprising a sulfur containing moiety. Instead, a surfactant is applied to a membrane or incorporated into a platinized activated carbon material. Thus even if Schlereth and Maley could be combined (which they cannot), the combination would lack an overcoating. Accordingly, Applicant believes the combination of Maley, and Schlereth is improper and respectfully requests withdrawal of the rejection

CONCLUSION

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejections of the claims and to pass this application to issue. However, should any outstanding issues remain, Applicant asks that the Examiner please contact the undersigned Attorney for Applicant.

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Respectfully submitted,

By _____
Kevin Cronin
Registration No.: 47,203
NUTTER McCLENNEN & FISH LLP
World Trade Center West
155 Seaport Boulevard
Boston, Massachusetts 02210-2604
(617) 439-2194
(617) 310-9194
Attorneys for Applicant

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